Watershed Evaluations

03040202-01

(Lynches River)

General Description

The South Carolina portion of 03040202-01 (formerly 03040202-010, 03040202-020, 03040202-030, and 03040202-040) is located in Lancaster and Chesterfield Counties and consists primarily of the ***Lynches River*** and its tributaries from where it enters South Carolina to Flat Creek. The watershed occupies 110,538 acres of the Piedmont region of South Carolina. Land use/land cover in the watershed includes: 61.6% forested land, 30.5% agricultural land, 5.0% urban land, 1.4% scrub/shrub land, 1.3% forested wetland, and 0.2% water.

The Lynches River originates in North Carolina, and accepts drainage also originating in North Carolina including Polecat Creek (Otter Creek, Silver Run), Buffalo Creek (Raccoon Branch Creek), and Dead Pine Creek. Hills Creek originates near the Town of Pageland and accepts the drainage of Mangum Branch, Cow Head Branch, and Conway Branch before flowing into the Lynches River. Mill Creek originates near the headwaters of Mangum Creek and flows into North Carolina. South Branch Wildcat Creek accepts drainage from Sutton Branch, North Branch Wildcat Creek, and Long Branch before flowing into the river. Turkey Creek enters the river next, followed by Arant Branch, Shop Branch, Belk Branch (Horton Spring Branch), Cedar Falls Branch, and Rocky Branch. Flat Creek accepts drainage from Baker Creek (Ellis Creek), Childers Creek (Mine Branch), Big Double Branch (Little Double Branch), Lick Creek, Lick Run (Mill Branch), and Dry Creek before draining into the river at the bottom of the watershed. An additional natural resource is the Heritage Trust Preserve surrounding Flat Creek and a tributary downstream from Lick Creek. There are a total of 288.3 stream miles and 105.1 acres of lake waters in this watershed, all classified FW.

Surface Water Quality

Station #	Type	Class	Description
PD-333	S/W/BIO	FW	Hills Creek at S-13-105
PD-366	INT	FW	Hills Creek at S-13-545
PD-113	P/INT	FW	Lynches River at SC 9 West of Pageland
PD-679	BIO	FW	North Branch Wildcat Creek at SR 178
PD-179	S/W	FW	N. Branch Wildcat Creek at S-29-39 1 mi S of Tradesville
PD-180	S/W/BIO	FW	S. Branch Wildcat Creek at S-29-39 2 mi S of Tradesville
RS-01058	S/W/BIO	FW	S. Branch Wildcat Creek at S-29-39 2 mi S of Tradesville
PD-182	BIO	FW	Flat Creek at SR 601
PD-342	W/INT	FW	Flat Creek at S-29-123
(PD-001)	W/INT/BIO	FW	Lynches River at SC 265

Hills Creek **-** There are two SCDHEC monitoring sites along Hills Creek. At the upstream site (***PD-333***), aquatic life uses are partially supported based on macroinvertebrate community data. There is also a significant increasing trend in five-day biochemical oxygen demand. Recreational uses are not supported at this site due to fecal coliform bacteria excursions. At the downstream site ***(PD-366)***, aquatic life and recreational uses are fully supported.

Lynches River (PD-113) - Aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. There is also a significant increasing trend in five-day biochemical oxygen demand and a decreasing trend in dissolved oxygen concentration. There is a significant decreasing trend in pH. Very high concentrations of cadmium were measured in the 2001 and 2003 sediment samples. Recreational uses are partially supported due to fecal coliform bacteria excursions. Station ***PD-001*** is physically located in 03040202-03, but also reflects the influence from this watershed drainage. Aquatic life and recreational uses are fully supported at PD-001; however, there is a significant increasing trend in total nitrogen. There is a significant decreasing trend in pH. A significant decreasing trend in turbidity suggests improving conditions for this parameter.

North Branch Wildcat Creek - There are two SCDHEC monitoring sites along North Branch Wildcat Creek. At the upstream site (***PD-679***), aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site (***PD-179***), aquatic life uses are fully supported; however, there is a significant decreasing trend in dissolved oxygen concentration and increasing trends in five-day biochemical oxygen demand and turbidity. There is a significant decreasing trend in pH. Recreational uses are not supported at this site due to fecal coliform bacteria excursions.

South Branch Wildcat Creek (PD-180/RS-01058) - Aquatic life uses are partially supported based on macroinvertebrate community data. There is also a significant decreasing trend in dissolved oxygen concentration and an increasing trend in five-day biochemical oxygen demand. There is a significant decreasing trend in pH. A very high concentration of cadmium was measured in the 2001 sediment sample. Recreational uses are partially supported due to fecal coliform bacteria excursions.

Flat Creek - There are two SCDHEC monitoring sites along Flat Creek. This is a blackwater system, characterized by naturally low pH conditions. At the upstream site ***(PD-182)***, aquatic life uses are partially supported based on macroinvertebrate community data. At the downstream site ***(PD-342)***, aquatic life uses are not supported due to occurrences of copper in excess of the aquatic life acute criterion. There is also a significant increasing trend in total nitrogen concentration. Although pH excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

Groundwater Quality

Well #	Class	Aquifer	Location
AMB-111	GB	PIEDMONT BEDROCK	WHITE BLUFF BAPTIST CHURCH

NPDES Program

Active NPDES Facilities

RECEIVING STREAM *FACILITY NAME* *PERMITTED FLOW @ PIPE (MGD)*	*NPDES#* *TYPE* *COMMENT*
HILLS CREEK TOWN OF PAGELAND/NORTHWEST PLANT PIPE #: 001 FLOW: 0.3	SC0021504 MINOR DOMESTIC
LYNCHES RIVER TRIBUTARY HANSON AGGREGATES SE/JEFFERSON PIPE #: 001 FLOW: 1.5	SCG730062 MINOR INDUSTRIAL
LYNCHES RIVER TRIBUTARY BUCKHORN MATERIALS, LLC PIPE #: 001, 004 FLOW: M/R	SC0048445 MINOR INDUSTRIAL
CEDAR FALLS BRANCH TRIBUTARY BUCKHORN MATERIALS, LLC PIPE #: 002-007 FLOW: M/R	SC0048445 MINOR INDUSTRIAL
NORTH BRANCH WILDCAT CREEK BUFORD HIIGH SCHOOL/LANCASTER PIPE #: 001 FLOW: 0.035	SC0030210 MINOR DOMESTIC
CHILDERS CREEK MINERAL MINING CORP. PIPE: 001 FLOW: M/R	SCG730049 MINOR INDUSTRIAL

Nonpoint Source Management Program

Land Disposal Activities

Landfill Facilities

LANDFILL NAME *FACILITY TYPE*	*PERMIT #* *STATUS*
MINING ROAD C&D LANDFILL CONSTRUCTION	292440-1201 INACTIVE
MINING ROAD INDUSTRIAL SW LANDFILL INDUSTRIAL	292440-1601 ACTIVE
KINLAW COMPOSTING SITE COMPOSTING	132442-3001 INACTIVE

Mining Activities

MINING COMPANY *MINE NAME*	*PERMIT #* *MINERAL*
HANSON AGGREGATES SE, INC. JEFFERSON PLANT	0093-25 GRANITE

Growth Potential

There is a low to moderate potential for growth in this watershed, which includes a portion of the Town of Pageland. The northeast corner of the watershed is the edge of the Charlotte Metroplex and future growth is expected. Pageland and the area immediately outside of

the town have water and sewer service. In addition, water service has recently been extended to the Lynches River Industrial Park, located along the S.C. Hwy. 151/U.S. Hwy. 601 corridor. Wal-Mart has constructed a food distribution center in the park and is currently expanding it, and spillover development from the park is expected. The remainder of the watershed is predominately rural with forested land and rangeland.

Watershed Restoration and Protection

Total Maximum Daily Loads (TMDLs)

A TMDL was developed by SCDHEC and approved by EPA for ***Hills Creek*** water quality monitoring site ***PD-333*** to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The most likely sources of elevated fecal coliform concentrations include leaking sewers, sanitary sewer overflows (SSOs), wildlife, animal feeding operations(AFOs), cattle with direct access to creeks, and land application of manure. The TMDL states that a 93% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

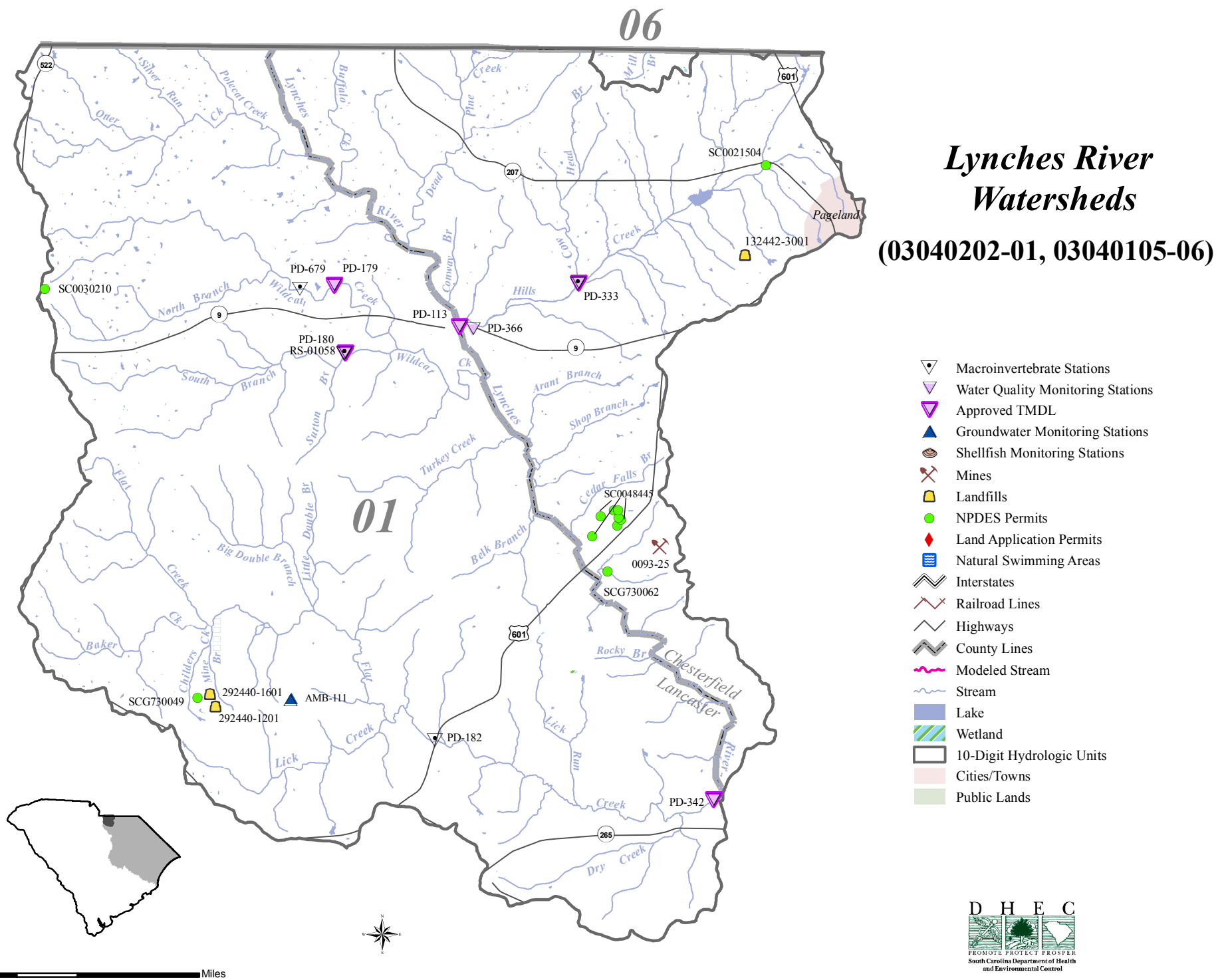
A TMDL was developed by SCDHEC and approved by EPA for the ***Lynches River*** water quality monitoring site ***PD-113*** to determine the maximum amount of fecal coliform bacteria it can receive from nonpoint sources and still meet water quality standards. The primary sources of fecal coliform appear to be cattle with direct access to streams, pets, wildlife, AFO land application areas, and failing OSWD systems. The TMDL states that an 81% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

A TMDL was developed by SCDHEC and approved by EPA for ***North Branch Wildcat Creek*** water quality monitoring site ***PD-179*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. Sources of fecal coliform are primarily nonpoint sources such as cattle, pets, wildlife, and AFO land application areas, with failing OSWD systems expected to be negligible. While only 1 percent of the watershed for PD-179 is urbanized land use, the town of Tradesville is very close to the WQM station. As a result, urban runoff from Tradesville may be contributing to fecal coliform exceedances. The TMDL states that an 85% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

A TMDL was developed by SCDHEC and approved by EPA for ***South Branch Wildcat Creek*** water quality monitoring site ***PD-180*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. The absence of point source discharges within the watershed indicates that nonpoint sources of fecal coliform appear to originate from turkeys and poultry as well as wildlife, while cattle, pets, land application of manure, and failing OSWD systems appear to be negligible. The TMDL states that a 51% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.

A TMDL was developed by SCDHEC and approved by EPA for ***Flat Creek*** water quality monitoring site ***PD-342*** to determine the maximum amount of fecal coliform bacteria it can receive and still meet water quality standards. The absence of point sources indicates that nonpoint sources of fecal coliform include turkey AFOs, land application of manure, and wildlife, with negligible contributions from cattle, pets, and failing OSWD systems. Fecal coliform

concentrations in this watershed do not appear related to precipitation, which is substantiated by the designated hydrologic critical condition of “dry.” The TMDL states that a 57% reduction in fecal coliform loading is necessary for the stream to meet the water quality standard.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01
Lynches River Watersheds
(03040202-01, 03040105-06)
SC0030210
PD-679
PD-179
PD-180
RS-01058
PD-113
PD-366
PD-333
SC0021504
132442-3001
Pageland
SC0048445
0093-25
SCG730062
SCG730049
292440-1601
292440-1201
AMB-111
PD-182
PD-342
Macroinvertebrate Stations
Water Quality Monitoring Stations
Approved TMDL
Groundwater Monitoring Stations
Shellfish Monitoring Stations
Mines
Landfills
NPDES Permits
Land Application Permits
Natural Swimming Areas
Interstates
Railroad Lines
Highways
County Lines
Modeled Stream
Stream
Lake
Wetland
10-Digit Hydrologic Units
Cities/Towns
Public Lands
Miles
0
1
2
4
D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control